to puncture the stem, leaving the egg deeply imbedded in the solid tissue.

Insects in the Waiahole Ditch

BY J. F. ILLINGWORTH

(Presented at the meeting of May 2, 1929)

I was surprised, April 30, 1929, to find insects literally by the tubful, that had fallen into this long open canal. At the point where the ditch crosses the Kamehameha Highway, at Waipio, there is a back eddy where the insects pile up. The collection floating on the surface of the water was a writhing mass of millions of insects. Those that resisted drowning worked their way to the top, and while resting on the bodies of those submerged, some were able to take wing. A field luna was circumventing this escape of the pests by dipping up this floating collection and placing it on a fire.

Examination showed that the mass was composed largely of the first two species of the following list:

1. *Adoretus sinicus* Burm. was present in countless numbers. These beetles do not easily succumb to drowning, so many eventually escape by taking wing.

2. *Charadromyia torrenticola* Terry. This chironomid fly is a natural inhabitant of the ditch. The floating mass was composed largely of their pupae and cast larval skins. The adults were emerging in numbers. Terry described this species from Hawaii and Maui in the Proceedings of the Hawaiian Entomological Society Vol. 2, p. 291, July, 1913. I have been unable to find any published reference to its occurrence on Oahu. Evidently it is present in the streams of the upper reaches of the Waiahole Ditch, and thus is carried down to the lower levels.

3. *Scolia manilae* Ashm. is unfortunately a frequent victim of the open waterway. Possibly the smell of the Adoretus beetles is an attraction to them, since they parasitize the grubs of this pest. I say this because I found these wasps congregating on the pile where the beetles had been dumped out of the ditch.

4. *Labidura riparia* (Pallas). Earwig.

5. *Periplaneta australasiae* (Fab.). Australian Roach.

6. *Diploptera dytiscoides* (Serv.). Cypress Roach.

7. *Carpophilus humeralis* (Fab.). Pineapple beetle.

8. *Aphodius lividus* Oliv. Dung beetle.
9. *Araecerus fasciculatus* (De G.). Fruit beetle.
10. *Monocrepidius exsul* Sharp. Click beetle.
11. *Gonocephalum seriatum* (Boisd.) Ground beetle.

Insects belonging to the species numbered (4) to (11) were represented by comparatively few specimens.

The piles of dead insects thrown out of the ditch attracted predators in great numbers. I have arranged these in the order of their abundance.

1. *Dactylosternum abdominale* (Fab.)
2. *Philonthus longicornis* Steph.
3. *Oxytelus* sp.
4. *Saprinus lugens* Er.
5. *Colobicus parilis* Pasc.

Tarsonemus ananas Tryon, **A Mite That Is Becoming a Serious Pest of Pineapples in Hawaii**

BY J. F. ILLINGWORTH

(Presented at the meeting of February 7, 1929)

While investigating the so-called Kauai disease of pineapples, early in the 1929 season, I discovered that many of the calyx cavities contained several sorts of mites. One species of these, which appeared to be able to cause considerable damage to the fruit, I determined as above. This mite was first discovered, under similar conditions in pineapples, in Queensland, in 1898, by Mr. Henry Tryon. His complete report on the subject was published in the Queensland Agricultural Journal, v. III, pp. 458-467, 1898.

Mr. Tryon's description of the injury to pineapple fruits by this mite appears to exactly fit what is known as Kauai disease in Hawaii. This name came about from the fact that the trouble was first discovered here on the island of Kauai. Briefly, this disease is a dry rot affecting one or more eyes of the fruit—fruitlets, Tryon calls them. As the fruit increases in size, there is more or less distortion, because of the dry, dead area, and this usually cracks open. The dry cavities are coated with the grey-green spores of the fungus Penicillium.

Inside the calyx cavities, on diseased fruits, there is considerable evidence of the work of the mites. Brown abrasions are seen